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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

WOLFE, DEBRA M

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/510,432	Applicant(s) KIMURA ET AL.	
	Examiner Debra Wolfe	Art Unit 3725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 May 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>5/1/07 & 5/23/07</u> . | 6) <input type="checkbox"/> Other: _____ |



FINAL REJECTION

Claim Rejections - 35 USC § 112

Claims 1-14 and 17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Newly amended claims 1, 7 and 17 have the limitations "the at least one centrifugal blasting machine is stationary" (claim 1 line 15 & claim 17) and "the at least one centrifugal blasting machine is not moved while applying the surface treatment" (claim 7 line 13) however the specification does not support this limitation. Applicant's disclosure is silent with regards to the movement or lack of movement of the blasting machine, therefore the specification does not provide a sufficient disclosure for the now presently claimed invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-6 and 8-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer (GB Patent # 893,324) in view of Mitsubayashi et al (US Patent # 6,651,299). Fischer discloses an apparatus comprising at least one centrifugal blasting machine for blasting solid particles against a continuously traveling metallic sheet (1) wherein the at least one centrifugal



blasting machine comprises a centrifugal rotor (wheel 9) having a rotation axis and the at least one centrifugal blasting machine is positioned such that a line of intersection of a plane perpendicular to the rotation axis with a plane of the metallic sheet (1) is at an angle (25) in a range of 0 to 45 degrees with respect to a direction of travel of the metallic sheet (1) [See FIGS 1, 2, 5 & 6]. It is further disclosed that the centrifugal blasting machine of Fischer is stationary. Fischer discloses the invention substantially as claimed except for wherein the solid particles have a mean particle diameter of 30 to 300 μm . However, Mitsubayashi et al teaches of using a shot-peening particle having a diameter of 70 μm in order to improve fatigue strength of the metal. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the diameter size of the particles of Fischer to have a diameter size of 70 μm as taught by Mitsubayashi et al to improve the fatigue strength of the metal during the peening process.

In reference to claim 2, Fischer discloses the at least one centrifugal blasting machine is positioned such that the line of intersection of the plane perpendicular to the rotation axis with the plane of the metallic sheet (1) is at an angle (25) in a range from 5 to 45 degrees with respect to the direction of travel of the metallic sheet (1) [See FIGS 5 and 6].

In reference to claim 3, the at least one centrifugal blasting machine is positioned such that the line of intersection of the plane perpendicular to the rotation axis with the plane of the metallic sheet (1) is parallel to the direction of travel of the metallic sheet (1).

In reference to claim 4, Fischer discloses the at least one centrifugal blasting machine comprises at least one centrifugal blasting machine (9, 10) positioned such that the line of intersection of the plane perpendicular to the rotation axis with the plane of the metallic sheet (1)



is parallel to the direction of travel of the metallic sheet, and at least one centrifugal blasting machine (19, 20) positioned such that the line of intersection of the plane perpendicular to the rotation axis with the plane of the metallic sheet (1) is at an angle in a range from 5 to 45 degrees with respect to the direction of travel of the metallic sheet (1). It is noted that the blasting machines (9,10 and 19, 20) are mounted on separate rotatable platforms and therefore are capable of being oriented in different angles.

In reference to claim 5, Fischer discloses the at least one centrifugal blasting machine comprises a plurality of centrifugal blasting machines (9, 10) are arranged along a width direction of the metallic sheet (1) [See FIGS] and the at least one of the plurality of centrifugal blasting machines are positioned such that the respective lines of intersection of the planes perpendicular to the rotation axes of the centrifugal rotors of the at least two of the plurality of centrifugal blasting machines with the plane of the metallic sheet (1) are parallel to each other [See pg. 2 lines 42-47].

In reference to claim 6, Fischer discloses the at least one centrifugal blasting machine comprises a plurality of centrifugal blasting machines arranged along a width direction of the metallic sheet (1) and the respective centrifugal rotors are driven by a common driving shaft.

In reference to claims 8 and 9, the Examiner takes Official Notice that the inclusion of a blasting machine in a hot-dip coating line and/or a continuous annealing line is conventionally known within the art of sheet product fabrication, and therefore would have been an obvious combination with Baughman and Mitsubayashi et al for producing a metallic sheet.

In reference to claim 10, Fischer discloses the at least one centrifugal blasting machine is positioned such that the line of intersection of the plane perpendicular to the rotation axis with



the plane of the metallic sheet (1) is at an angle (25) in a range from 5 to 30 degrees with respect to the direction of travel of the metallic sheet (1) [See FIG 5].

In reference to claim 11, Fischer discloses at least two of the plurality of centrifugal blasting machines are positioned such that the respective lines of intersection of the planes perpendicular to the rotation axes of the centrifugal blasting machines with the plane of the metallic sheet (1) are parallel to the direction of travel of the metallic sheet (1).

In reference to claim 12, Fischer discloses the at least two of the plurality of centrifugal blasting machines are positioned such that the respective lines of intersection of the planes perpendicular to the rotation axes of the centrifugal rotors of the at least two of the plurality of centrifugal blasting machines with the plane of the metallic sheet (1) are at an angle in a range from 5 to 45 degrees with respect to the direction of travel of the metallic sheet (1).

In reference to claim 13, Fischer discloses the at least one centrifugal blasting machine comprises a first plurality of the centrifugal blasting machines (9, 10) which are arranged along a width direction of the metallic sheet (1) and the respective centrifugal rotors of which are all driven by a first common driving shaft and a second plurality of the centrifugal blasting machines (19, 20) which are arranged along a width direction of the metallic sheet (1) and the respective centrifugal rotors of which are all driven by a second common driving shaft.

In reference to claim 14, Fischer discloses the first and second pluralities of centrifugal blasting machines are positioned such that the respective lines of intersection of the planes perpendicular to the rotation axes of the centrifugal rotors of the first and second pluralities of centrifugal blasting machines with the plane of the metallic sheet (1) are parallel to the direction of travel of the metallic sheet (1).



2. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer (GB Patent # 893,324) in view of Mitsubayashi et al (US Patent # 6,651,299). Fischer discloses a method of applying surface treatment to a continuously traveling metallic sheet (1) by blasting solid particles against the metallic sheet (1) using at least one centrifugal blasting machine (9) which comprises a centrifugal rotor having a rotation axis and which is positioned such that a line of intersection of a plane perpendicular to the rotation axis with a plane of the metallic sheet (1) is at an angle (25) in a range from 0 to 45 degrees with respect to a direction of travel of the metallic sheet (1). It is further disclosed that the centrifugal blasting machine of Fischer are stationary. Fischer discloses the invention substantially as claimed except for wherein the solid particles have a mean particle diameter of 30 to 300 μm . However, Mitsubayashi et al teaches of using a shot-peening particle having a diameter of 70 μm in order to improve fatigue strength of the metal. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the diameter size of the particles of Fischer to have a diameter size of 70 μm as taught by Mitsubayashi et al to improve the fatigue strength of the metal during the peening process.

3. Claims 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer (GB Patent # 893,324) in view of Mitsubayashi et al (US Patent # 6,651,299). Fischer discloses an apparatus comprising at least one centrifugal blasting machine comprises of a centrifugal rotor having a rotation axis, and the at least one centrifugal blasting machine is positioned such that a line of intersection of a plane perpendicular to the rotation axis with a plane of the metallic sheet (1) is at an angle (25) in a range of 5 to 45 degrees with respect to a direction of travel of the metallic sheet. Fischer discloses the invention substantially as claimed except for wherein the



solid particles have a mean particle diameter of 30 to 300 μm . However, Mitsubayashi et al teaches of using a shot-peening particle having a diameter of 70 μm in order to improve fatigue strength of the metal. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the diameter size of the particles of Fischer to have a diameter size of 70 μm as taught by Mitsubayashi et al to improve the fatigue strength of the metal during the peening process.

In reference to claim 16, Fischer discloses the at least one centrifugal blasting machine (9) is positioned such that the line of intersection of the plane perpendicular to the rotation axis with the plane of the metallic sheet is at an angle (25) in a range of 5 to 30 degrees with respect to the direction of travel of the metallic sheet (1) [See FIG 5].

In reference to claim 17, the centrifugal blasting machine of Fischer is stationary.

In reference to claim 18, Fischer further discloses the at least one centrifugal blasting machine comprising of a plurality of centrifugal blasting machines (9, 10) arranged along a width direction of the metallic sheet (1) [See FIGS] and at least two of the plurality of centrifugal blasting machines (9, 10) are positioned such that the respective lines of intersection of the planes perpendicular to the rotation axes of the at two of the plurality of centrifugal rotors with the plane of the metallic sheet (1) are parallel to each other and are at an angle (25) in a range from 5 to 45 degrees with respect to a direction of travel of the metallic sheet (1) [See pg. 2 lines 42-47 and FIG 1-2].

In reference to claim 19, Fischer discloses the at least one centrifugal blasting machine comprising of a first plurality of centrifugal blasting machines (9, 10) arranged along a width direction of the metallic sheet (1) and a second plurality of centrifugal blasting machines (19, 20)



arranged along a width direction of the metallic sheet (1) at a position downstream from the first plurality of centrifugal blasting machines (9, 10) [See FIGS 1-3].

In reference to claim 20, the first and second pluralities of centrifugal blasting machines 9, 10 and 19, 20) are positioned such that the respective lines of intersection of the planes perpendicular to the rotation axes of the centrifugal rotors of the first and second pluralities of centrifugal blasting machines (9, 10 and 19, 20) with the plane of the metallic sheet are at an angle in a range from 5 to 45 degrees with respect to the direction of travel of the metallic sheet (1) [See FIGS 5, 6].

Response to Arguments

Applicant's arguments with respect to claims 1 and 7 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

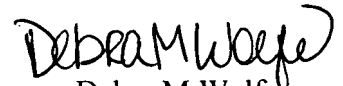


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Debra Wolfe whose telephone number is (571) 272-1904. The examiner can normally be reached Monday - Thursday 7am - 4:30pm with alternating Friday 7am - 3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derris Banks can be reached at (571) 272-4419. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Debra M Wolfe
Examiner
Art Unit 3725


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